

REMARKS

Claims 1-7, 9-13, 17, and 19-21 remain in the application and stand rejected.
Reconsideration of the rejection is respectfully requested in light of the following reasons.

Restriction Requirement

Applicants sincerely thank the Examiner for withdrawing the Restriction Requirement mailed July 30, 2004.

Claim Rejections – 35 U.S.C. § 103 (Guo and Edwards)

Claims 1-7, 9-13, 17, and 19-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,251,759 to Guo et al. (“Guo”) in view of U.S. Patent No. 5,944,857 to Edwards et al. (“Edwards”). The rejection is respectfully traversed.

Claims 1 and 17 are patentable over the combination of Guo and Edwards at least for reciting: “a loader configured to receive a cassette containing a plurality of wafers to be processed.” According to the last office action, Guo includes such a loader in the form of wafer transport blade 130. Guo FIG. 1 is reproduced below for ease of discussion.

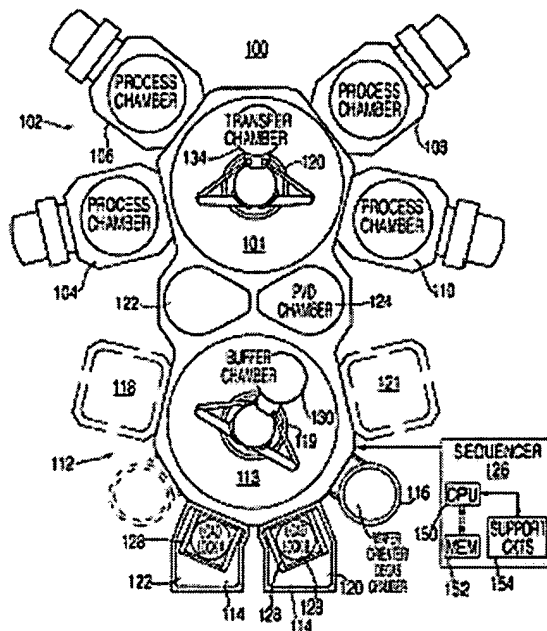


FIG. 1

As is evident from Guo FIG. 1, wafer transport blade 130 is actually an end-effector of robot 119 (see also Guo, column 4, lines 32-41) and not a loader in the context of claims 1 and 17. Prior to the present amendment, claims 1 and 17 recited that the loader is configured to receive a **plurality of wafers**. The transport blade 130 cannot possibly receive more than one wafer. Claims 1 and 17 have been amended in this response to recite that the loader receives a wafer cassette, to further clarify this distinction.

According to the last office action, it would have been obvious to use the atmospheric front end (AFE) having the single-wafer load lock and robot of Edwards as the wafer handling system in Guo. Edwards FIG. 4 is reproduced below.

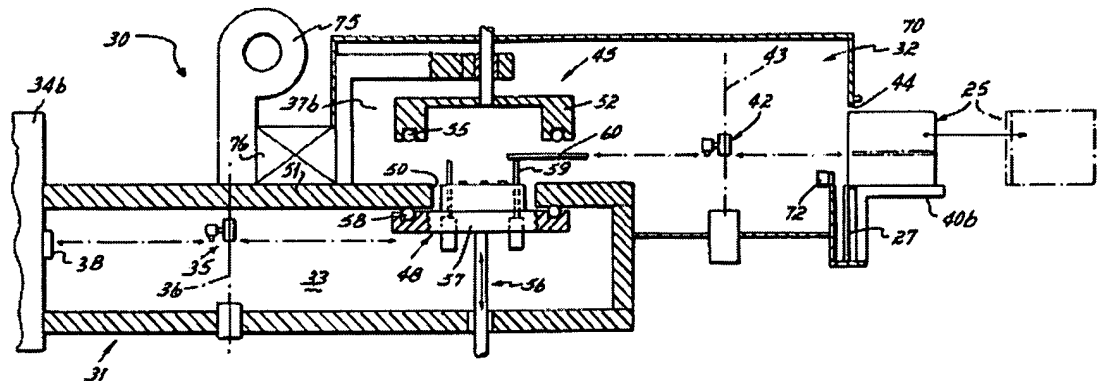


FIG. 4

Edwards includes a single-wafer load lock 45. However, the **load lock 45 is part of the high vacuum back end (HVBE) 31**, not the atmospheric front end 32 (Edwards, col. 8, lines 10-16; FIG. 4). That is, the load lock 45 cannot exist separately from the VHBE 31 as it is integrally part of it. The wafer loading system of Guo comprises load locks 114 (Guo, FIG. 1). It is respectfully submitted that the Edwards load lock 45 cannot be incorporated as the wafer loading system of Guo because the Edwards VHBE 31 would have to go with the load lock 45. There is also no teaching in either Edwards or Guo how the Edwards VHBE 31 with the load lock 45 can be incorporated in Guo. Therefore, the combination of Guo and Edwards cannot render claims 1 and 17 obvious.

Furthermore, Edwards disclose a wafer processing architecture that is totally different from that of Guo or claims 1 and 17. For example, Edwards teaches away from the use of removable wafer cassettes and cassette elevators (Edwards, col. 2, lines 5-18; col. 3, lines 16-32). Accordingly, Edwards AFE 32 cannot accept removable cassettes (Edwards, col. 7, lines 34-37). Claims 1 and 7 have been amended to recite that the loader is configured to receive a removable cassette to further distinguish these claims from Guo and Edwards.

Yet another example of how Edwards' architecture is totally different from that recited in claims 1 and 17 is the inclusion of the load lock 45 in the VHBE 31. This architecture requires the wafer supporting portion of support 48 **to be moved out of the transfer chamber 33** of the VHBE 31 during pump down or venting of the load lock 45. In Edwards, this is accomplished by moving the support 48 all the way up to the top

surface of transfer chamber 33. Accordingly, Edwards does not employ any closeable opening that faces the robot 35 and separates the load lock 45 from the transfer chamber 33. This is not only complicated, but also detrimental to wafer orientation as it involves a relatively long wafer vertical movement.

To emphasize this architectural difference, claims 1 and 17 have been amended to recite that the load lock is separated from the load (or first chamber) by a closeable opening that faces a robot in the load chamber (e.g., see Specification, page 6, lines 7-13). In Edwards, there is no **closeable opening that faces the robot 35** and separates the load lock 45 from the transfer chamber 33 (see Edwards, FIG. 4). Claims 1 and 17 have also been amended to recite that the pedestal lifts the wafer from a plurality of pins (e.g., see Specification, page 7, lines 13-21). In contrast, Edwards support 48 ("pedestal") cannot be moved to pick up a wafer from pins 59.

For at least the above reasons, claims 1 and 17 are patentable over the combination of Guo and Edwards. Claims 2-7 and 9-13 depend on claim 1, while claims 19-21 depend on claim 17. Therefore, claims 2-7, 9-13, and 19-21 are patentable over Guo and Edwards at least for the same reasons that their respective independent claims are patentable.

Double Patenting

Claims 1-7, 9-13, 17, and 19-21 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over U.S. Patent No. 6,431,807 to Stevens et al. ("Stevens I") or U.S. Patent No. 6,722,835 to Stevens et al. ("Stevens-II) in view of Guo. Applicants will file a terminal disclaimer if the instant claims are deemed allowable.

Conclusion

Docket No. 10001.000600 (NVLS 379)
Response To Office Action
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For at least the above reasons, it is respectfully submitted that claims 1-7, 9-13, 17, and 19-21 are in condition for allowance. The Examiner is invited to telephone the undersigned at (408)436-2112 for any questions.

If for any reason an insufficient fee has been paid, the Commissioner is hereby authorized to charge the insufficiency to Deposit Account No. 50-2427.

Respectfully submitted,
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